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Filing Date: December 17, 2001

Title: INTELLIGENT BRAKING SYSTEM AND METHOD

## REMARKS

Applicant has reviewed and considered the Office Action dated November 22, 2002, and the references cited therewith.

Claims 1, 14, 25, 26, and 31-41 are amended. Applicant believes that the amended claims are supported by the specification, including, for example, the portions at page 2, lines 18-22 and the portion at page 3, lines 10-18. It is believed that no new matter is introduced by the amendments herein.

No claims are cancelled.

Claims 42-45 are added. Applicant believes that the new claims are supported by the specification, including, for example, the portion at page 9, lines 5-26. It is believed that no new matter is introduced herein.

Claims 1-45 remain pending in this application, each of which is believed to be in condition for allowance.

# 102 Rejection of the Claims

Claims 1, 3, 4, 6-9, 12-14, 19, 23-28 and 31-34 were rejected under 35 USC 102(b) as being anticipated by Hiwatashi (US 6,056,374). Applicant respectfully traverses the rejection for various reasons, including those presented below.

As noted by the Examiner in the Interview Summary dated February 5, 2003, Hiwatashi fails to specifically teach the brake controller to selectively apply and release a brake of the vehicle based upon a comparison of a deceleration profile with range data.

## Office Action Item 2

As to claim 1, and notwithstanding the amendment, Applicant respectfully traverses the rejection and submits that the Office Action has not established *prima facie* anticipation. Applicant is unable to find such a teaching or suggestion, in Hiwatashi, wherein the processor executes instructions to operate the brake controller to selectively apply and release a brake of the vehicle based on a comparison of a deceleration profile with range data from the first range detector and a speed of the vehicle, as recited in claim 1. Thus, it appears that Hiwatashi does not teach or suggest all claim elements.

Reconsideration and allowance of claim 1 is respectfully requested.

As to claim 3, 4, 6-9, 12 and 13, Applicant respectfully traverses the rejections and submits that the Office Action has not established *prima facie* anticipation. Claims 3, 4, 6-9, 12 and 13 depend from independent claim 1 and each recites additional elements. For at least the reasons set forth above regarding independent claim 1, it is believed that each of claims 3, 4, 6-9, 12 and 13 are in condition for allowance.

In addition, Applicant respectfully submits that the Office Action includes assertions that do not appear to be supported by Hiwatashi. For example, Hiwatashi does not appear to teach or suggest the directional signal recited in claim 12 or that the vehicle direction detector includes a Hall effect sensor recited in claim 13. The Office Action refers to a steering sensor or longitudinal sensors, however, Applicant respectfully traverses and submits that a steering sensor or longitudinal sensor does not teach or suggest a directional signal. Furthermore, citation to an authority in support of the Office Action assertion is respectfully requested.

Reconsideration and allowance of claims 3, 4, 6-9, 12 and 13 is respectfully requested.

As to independent claim 14, and notwithstanding the amendment, Applicant respectfully traverses the rejection and submits that the Office Action has not established *prima facie* anticipation. For example, Applicant is unable to find, in Hiwatashi, a teaching or suggestion of modulating a vehicle brake based on the electronic correction signal, as recited in claim 14. Thus, it appears that Hiwatashi does not teach or suggest all claim elements.

Reconsideration and allowance of claim 14 is respectfully requested.

Furthermore, Applicant respectfully traverses the assertion that "[a] first deceleration signal corrects a second deceleration signal when the vehicle moves within a predetermined distance of the obstacle." Applicant respectfully inquires as to the reason for this assertion. In addition, Applicant requests clarification and citation to an authority in support of the assertion. In the alternative, Applicant requests withdrawal of the assertion.

As to claims 19 and 23-25, Applicant submits that each depends, ultimately, from independent claim 14 and each recites additional elements. For at least the reasons set forth above regarding independent claim 14, it is believed that each of claims 19 and 23-25 are in condition for allowance.

Reconsideration and allowance of claims 19 and 23-25 is respectfully requested.

As to independent claim 26, and notwithstanding the amendment, Applicant respectfully traverses the rejection and submits that the Office Action has not established *prima facie* anticipation. For example, Applicant is unable to find, in Hiwatashi, a teaching or suggestion of

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modulating a brake system of the vehicle based on the deceleration profile, as recited in claim 26. Thus, it appears that Hiwatashi does not teach or suggest all claim elements.

Reconsideration and allowance of claim 26 is respectfully requested.

As to dependent claims 27, 28 and 31-33, and notwithstanding the amendment of claims 31-33, Applicant submits that each depends, ultimately, from independent claim 26 and each recites additional elements. For at least the reasons set forth above regarding independent claim 26, it is believed that each of claims 27, 28 and 31-33 are in condition for allowance.

Reconsideration and allowance of claims 27, 28 and 31-33 is respectfully requested.

As to claim 29, Applicant is unclear of the status of the claim. In the Detailed Action on page 2 of the Office Action, Applicant is unable to find a clear statement as to a rejection of claim 29. A statement on page 4 of the Office Action does not explicitly state grounds for rejection of claim 29. The Office Action summary states that claims 1-41 are rejected but includes no description of the grounds for rejection of claim 29. Thus, it appears that claim 29 was not properly rejected pursuant to the requirements of M.P.E.P. § 707.07(d).

Nevertheless, Applicant respectfully submits that claim 29 depends from independent claim 26 and recites additional elements. For at least the reasons set forth above regarding independent claim 26, it is believed that claim 29 is in condition for allowance.

Clarification of the status, and allowance, of claim 29 is respectfully requested.

As to claim 34, and notwithstanding the amendment, Applicant respectfully traverses the rejection and submits that the Office Action has not established prima facie anticipation. For example, Applicant is unable to find, in Hiwatashi, a teaching or suggestion of modulating a brake system of the vehicle to restrict vehicle movement based on the electronic speed signal, electronic direction signal and the electronic condition signal, as recited in claim 34. Thus, it appears that Hiwatashi does not teach or suggest all claim elements.

Reconsideration and allowance of claim 34 is respectfully requested.

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# 103 Rejection of the Claims

# Office Action Item 5

Claim 5 was rejected under 35 USC 103(a) as being unpatentable over Hiwatashi in view of Novori et al. (US 3,918,058). Applicant respectfully traverses the rejection for various reasons, including those presented below.

As to claim 5, and notwithstanding the amendment of base claim 1, Applicant respectfully traverses the rejection of claim 5 and submits that the Office Action has not established prima facie obviousness. For example, Applicant submits that motivation to combine has not been shown. Applicant respectfully traverses the Office Action assertion that "it would have been obvious to one of ordinary skill in the art to have utilized the teachings of Novori et al. when having provided the system of Hiwatashi with Doppler radar speed sensing means, thus increasing the accuracy of vehicle speed determination." The Office Action also asserts that "Novori et al. teaches the use of a Doppler radar sensor to determine a vehicle speed." Applicant respectfully traverses these assertions. In particular, Applicant is unable to find, and the Office Action does not identify, a teaching in Noyori that would indicate that the Doppler radar sensor determines a vehicle speed. The Office Action does not set forth cogent reasoning as to how the Doppler radar sensor of Noyori is applied to detect vehicle speed or how the proposed combination is able to 'increase the accuracy of vehicle speed determinations.' Applicant submits that the Doppler radar units of Noyori cannot be converted to speed sensors without compromising pitch angle detection and thus, changing the principal of operation of Novori. Thus, it appears that the asserted motivation to combine Novori and Hiwatashi is flawed and therefore, insufficient to establish prima facie obviousness.

Furthermore, Applicant is unable to find, and the Office Action does not identify, a suggestion as to the desirability, either in the cited documents themselves or in the knowledge generally available to an art worker, of modifying the documents as described or to combine teachings as suggested. See In Re Sang Su Lee, No. 00-1158 (Serial No. 07/631,240), (Fed. Cir.), decided January 18, 2002.

For these and other reasons, including those set forth herein regarding independent claim 1, Applicant submits that prima facie obviousness has not been established. For example, the proposed combination of Noyori to Hiwatashi, even if properly motivated, does not appear to teach or suggest all elements recited in the claim.

Reconsideration and allowance of claim 5 is respectfully requested.

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## Office Action Item 6

Claims 2, 10, 11, 15-18, 20-22 and 30 were rejected under 35 USC § 103(a) as being unpatentable over Hiwatashi in view of Smithline (US 5,734,336). Applicant respectfully traverses the rejection for various reasons, including those presented below.

As to claim 2, and notwithstanding the amendment of base claim 1, Applicant respectfully traverses the rejection of claim 2 and submits that the Office Action has not established *prima facie* obviousness. For example, Applicant submits that motivation to combine has not been shown. Applicant respectfully traverses the Office Action assertion that "it would have been obvious to one of ordinary skill in the art to have provided the system of Hiwatashi with wireless range detectors as taught by Smithline, thus reducing the cost of the system by eliminating materials such as wire and wire harnesses." Applicant is unable to find, and the Office Action does not identify, a teaching in Hiwatashi or Smithline consistent with the asserted grounds for motivation. Applicant submits that the asserted grounds for motivation are not taught or suggested by the cited documents. Thus, it appears that the asserted motivation to combine Hiwatashi and Smithline is flawed and therefore, insufficient to establish *prima facie* obviousness.

Furthermore, Applicant is unable to find, and the Office Action does not identify, a suggestion as to the desirability, either in the cited documents themselves or in the knowledge generally available to an art worker, of modifying the documents as described or to combine teachings as suggested.

In addition, claim 2 depends from independent claim 1 and recites additional elements. For at least the reasons set forth above regarding independent claim 1, it is believed that claim 2 is in condition for allowance.

As to claims 10, 11, 15-18, 20-22 and 30, and notwithstanding the amendment of base claims 1, 14 and 26 from which each ultimately depends, Applicant respectfully traverses the rejection of claims and submits that the Office Action has not established *prima facie* obviousness. For example, Applicant submits that motivation to combine has not been shown. Applicant respectfully traverses the Office Action assertion that "it would have been obvious to one of ordinary skill in the art to have utilized the teachings of Smithline when having used the system of Hiwatashi on a large vehicle requiring a greater number of sensors, thus improving the effectiveness of the system." Applicant is unable to find, and the Office Action does not identify, a teaching in Hiwatashi or Smithline consistent with the asserted grounds for motivation.

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Applicant submits that the asserted grounds for motivation are not taught or suggested by the cited documents. Thus, it appears that the asserted motivation to combine Hiwatashi and Smithline is flawed and therefore, insufficient to establish *prima facie* obviousness.

Furthermore, Applicant is unable to find, and the Office Action does not identify, a suggestion as to the desirability, either in the cited documents themselves or in the knowledge generally available to an art worker, of modifying the documents as described or to combine teachings as suggested.

In addition, claims 10 and 11 depend from independent claim 1, claims 15-18 and 20-22 depend from independent claim 14 and claim 30 depends from independent claim 26, and each dependent claim recites additional elements. For at least the reasons set forth above regarding independent claims 1, 14 and 26, it is believed that claims 10, 11, 15-18, 20-22 and 30 are in condition for allowance.

# Office Action Item 7

Claims 35-41 were rejected under 35 USC § 103(a) as being unpatentable over Hiwatashi in view of Smithline and in view of US 6,450,587 to MacGregor et al. Applicant respectfully traverses the rejection for various reasons, including those presented below.

Notwithstanding the amendment of each, Applicant respectfully traverses and submits that the Office Action has not established *prima facie* obviousness. For example, Applicant submits that motivation to combine has not been shown. Applicant respectfully traverses the Office Action assertion that "it would have been obvious to one of ordinary skill in the art to have provided the automatic brake control apparatus of Hiwatashi with a open door sensing function, a parking brake function, and a speed control function when approaching an obstacle to the rear as taught by MacGregor et al., thus improving the safe operation of the vehicle." Applicant is unable to find, and the Office Action does not identify, a teaching in Hiwatashi, Smithline or MacGregor consistent with the asserted grounds for motivation. Applicant submits that the asserted grounds for motivation are not taught or suggested by the cited documents. Thus, it appears that the asserted motivation to combine Hiwatashi, Smithline and MacGregor is flawed and therefore, insufficient to establish *prima facie* obviousness.

Furthermore, Applicant is unable to find, and the Office Action does not identify, a suggestion as to the desirability, either in the cited documents themselves or in the knowledge generally available to an art worker, of modifying the documents as described or to combine

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teachings as suggested.

In addition, claims 35-41 depend from independent claim 34 and each recites additional elements. For at least the reasons set forth above regarding independent claim 34, it is believed that claims 35-41 are in condition for allowance.

## Conclusion

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612-373-6911) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

RICHARD A. GUNDERSON

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this **20** day of <u>February, 2003</u>.

Candis B. Buending

Name

Signature